UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,617	09/29/2000	Robert Dunstan	042390.P9731	9612

7590	04/04/2006

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EXAMINER
DU, THUAN N

ART UNIT	PAPER NUMBER
2116	

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 January 2006</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-23</u> is/are pending in the application.

    4a) Of the above claim(s) <u>6-11</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-5 and 12-23</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   It is hereby acknowledged that the following papers have been received and placed of

record in the file: Amendment (dated 1/20/06).

2.   Claims 6-11 have been withdrawn from consideration. Claims 1-5 and 12-23 are

presented for examination.

3.   The text of those sections of Title 35, U.S. Code not included in this action can be found

in a prior Office action.

4.   The rejections are respectfully maintained and reproduced infra for applicant's

convenience.

Claim Rejections - 35 USC § 112

5.   Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

6.   Claim 1 recites the limitation "the subsystem" in line 3. There is insufficient antecedent

basis for this limitation in the claim. "the subsystem" should be -- the autonomous subsystem --.

Correction is required.

7.   Claims 2-5 are also rejected for incorporating the above deficiency by dependency.

Claim Rejections - 35 USC § 103

8.   Claims 1-5, 12-15 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Gephardt et al. [Gephardt] (U.S. Patent No. 5,640,573) in view of Pearce (U.S. Patent No.

5,819,100).

9.   Regarding claims 1 and 5, Gephardt teaches a method for controlling a power state of an

autonomous subsystem (202) comprising:

receiving from the autonomous subsystem a message [col. 3, lines 50-52, 63-64; col. 4,

lines 64-65; col. 6, lines 12-15]; and

setting the power state of the autonomous subsystem based on the message [col. 6, lines

15-28].

Gephardt uses system management interrupt signal SMI to control the power state of the

subsystem [col. 4, lines 53-60; col. 5, lines 14-15 (table I)]. Gephardt does not explicitly

disclose that the power state of the subsystem is controlled exclusive of a main operating system.

Pearce teaches a method for controlling a power state of a subsystem independently from

a main operating system [col. 3, lines 57-58; col. 4, lines 9-11] by activating system management

interrupt signal SMI to start the operation of a system management mode [col. 5, lines 1-3; col.

6, lines 1-8].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention was made to combine the teachings of Gephardt and Pearce because they both teach a

system for controlling a power state of a subsystem using system management interrupt signal

SMI. Moreover, activating system management interrupt signal SMI to start the operation of a

system management mode to control the power state of a subsystem without involvement of a

main operating system taught by Pearce would reduce an overhead of the main operating system.

10.　　Regarding claim 2, Gephardt teaches that the message is selected from the group

consisting of a full wakeup, a limited wakeup, a resume previous state, and a status request [col.

6, lines 15-35].

11.　　Regarding claim 3, Gephardt teaches acknowledging a received subsystem message by

controlling the clock control signals [col. 6, lines 15-16].

12.　　Regarding claim 4, Gephardt teaches that the message is performed without involvement

of the main operating system [col. 5, lines 45-55].

13.　　Regarding claim 12, Gephardt teaches a machine-readable medium having stored thereon

instructions, which when executed by a processor, cause said processor to perform the following:

　　　　receiving input signals [col. 3, lines 63-64];

　　　　communicate with an autonomous subsystem (via bus 210) [col. 3, lines 63-65];

　　　　determine a desire power state for the autonomous subsystem based upon received input

signals and communications with the autonomous subsystem [col. 3, line 65 to col. 4, line 19;

col. 6, lines 15-28]; and

　　　　communicate to the autonomous subsystem the desired power state [col. 6, lines 16-17].

　　　　Gephardt uses system management interrupt signal SMI to control the power state of the

subsystem [col. 4, lines 53-60; col. 5, lines 14-15 (table I)]. Gephardt does not explicitly

disclose that the power state of the subsystem is controlled exclusive of a main operating system.

　　　　Pearce teaches a method for controlling a power state of a subsystem independently from

a main operating system [col. 3, lines 57-58; col. 4, lines 9-11] by activating system management

interrupt signal SMI to start the operation of a system management mode [col. 5, lines 1-3; col.

6, lines 1-8].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention was made to combine the teachings of Gephardt and Pearce because they both teach a

system for controlling a power state of a subsystem using system management interrupt signal

SMI. Moreover, activating system management interrupt signal SMI to start the operation of a

system management mode to control the power state of a subsystem without involvement of a

main operating system taught by Pearce would reduce an overhead of the main operating system.

14.   Regarding claim 13, Pearce teaches that the power management is controlled by a user

[col. 5, line 5].

15.   Regarding claim 14, Gephardt teaches that the subsystem acknowledges a received

communication [col. 6, lines 21-25].

16.   Regarding claims 15 and 21, Gephardt teaches a system comprising:

a power state controller (208) having an input port, an output port, and a communications

channel (210) [Fig. 1];

energy monitor signal coupled to the power state controller input port [col. 4, lines 41-

43];

an autonomous subsystem (202) coupled to the power state controller input port and the

power state controller communications channel [Fig. 1].

Gephardt uses system management interrupt signal SMI to control the power state of the

subsystem [col. 4, lines 53-60; col. 5, lines 14-15 (table I)]. Gephardt does not explicitly

disclose that the power state of the subsystem is controlled exclusive of a main operating system.

Pearce teaches a method for controlling a power state of a subsystem independently from a main operating system [col. 3, lines 57-58; col. 4, lines 9-11] by activating system management interrupt signal SMI to start the operation of a system management mode [col. 5, lines 1-3; col. 6, lines 1-8]. Furthermore, Pearce teaches that the power management is controlled by a user [col. 5, line 5], therefore, inherently, Pearce must include a user input for the user to initiate a control signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Gephardt and Pearce because they both teach a system for controlling a power state of a subsystem using system management interrupt signal SMI. Moreover, activating system management interrupt signal SMI to start the operation of a system management mode to control the power state of a subsystem without involvement of a main operating system taught by Pearce would reduce an overhead of the main operating system.

17.   Regarding claim 22, Gephardt and Pearce do not explicitly disclose that the communications link coupling the power controller to the autonomous subsystem comprising a link having lower bandwidth than a system bus in the computer system. One of ordinary skill in the art would have readily recognized that it would have been obvious at the time of the invention to use the communications link coupling the power state controller to the autonomous subsystem comprising a link having lower bandwidth than a system bus in the computer system. One of ordinary skill in the art would have readily recognized that the amount of data exchanged on the link between the power state controller and the autonomous subsystem is far less than the amount of data exchanged on the main system bus. Therefore, using a low bandwidth

communications link would reduce cost and power consumption of the computer system, which would be desirable.

18.   Regarding claim 23, Gephardt teaches that the message is transmitted, via communications channel 210, without involvement of the main operating system [col. 5, lines 45-55]. Therefore, inherently, the communication channel is operable without the use of the main operating system.

19.   Regarding claims 18-20, they do not teach or further define over the limitations recited in the claims 12-14. Therefore, claims 18-20 are also rejected as being unpatentable over Gephardt in view of Pearce for the same reasons set forth in claims 12-14.

20.   Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gephardt et al. [Gephardt] (U.S. Patent No. 5,640,573) in view of Pearce (U.S. Patent No. 5,819,100) and further in view of Goff et al. [Goff] (U.S. Patent No. 6,105,142)[1].

21.   Regarding claim 16, Gephardt-Pearce does not specifically teach the user input is a switch to turn the system on and off.

Goff teaches a key on a keyboard may emulate a power switch (power button).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Gephardt-Pearce and Goff because they both teach system for controlling power in a computer system. Goff's teaching of turning the system on and off directly from a keyboard would increase the convenience of the system by allowing a key on

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[1] Goff was cited in the previous office action.

Gephardt-Pearce's keyboard may emulate a power switch. Therefore, user input signal sent to

the power controller would include power on/off signal.

22.   Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gephardt et al.

[Gephardt] (U.S. Patent No. 5,640,573) in view of Pearce (U.S. Patent No. 5,819,100) and

further in view of Arai et al. [Arai] (U.S. Patent No. 5,978,922)[2].

23.   Regarding claim 17, Gephardt-Pearce does not explicitly teach the system including an

energy monitor signal coupled to the power state controller for indicating the remaining battery

capacity.

Arai teaches a power management system comprising an energy monitor signal coupled

to a power controller (controller 8) input port [signal inputted to the controller 8 to indicate the

remaining power in a power source] for indicating the remaining battery capacity [col. 5, lines

33-35].

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the teachings of Gephardt-Pearce and Arai because it would increase the

flexibility of the system by allowing the power control unit of Gephardt-Pearce can also monitor

power level of power source to ensure the power source has sufficient power for providing to the

subsystem.

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[2] Arai was cited in the previous office action.

Response to Arguments

24.   Applicant's arguments filed January 20, 2006 have been fully considered but they are not

persuasive.

In response to applicants argued that, in Pearce, "An operation system independent

environment does not suggest that programs running in such environment are capable of

performing operations exclusive of the operating system," examiner respectfully submits that

Pearce clearly discloses that the operations are performed independent of an operating system

[col. 2, lines 57-61].

In response to applicants argued that "the system management mode (SMM) of operating

is activated in response to a SMI# signal, which is evoked by the operating system (i.e., by BIOS

portion of the operating system)," examiner respectfully disagrees. First of all, Pearce teaches

that the SMI# signal is evoked by a program in the BIOS [col. 4, line 65 to col. 5, line 3], the

SMI# signal is *not* evoked by an operating system. And, the BIOS is *not* a portion of the

operating system as argued by applicant. Pearce discloses that the BIOS is the part (i.e., tool,

interface) which used to customize the operating system. Pearce does not teach that the BIOS is

a portion of an operating system.

Conclusion

25.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

26.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Thuan N. Du whose telephone number is (571) 272-3673. The

examiner can normally be reached on Monday - Friday: 9:00 am - 5:30 pm, EST.
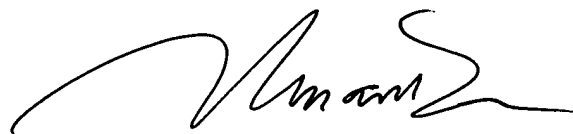
If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Lynne H. Browne can be reached on (571) 272-3670.

Central TC telephone number is (571) 272-2100.

The fax number for the organization is (571) 273-8300.

27.   Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

Thuan N. Du
March 31, 2006

THUAN N. DU
PRIMARY EXAMINER